VARI-LITE LLC

TEST REPORT

SCOPE OF WORK
LED Performance Testing

MODEL NUMBER
VL 1600 Profile

PROJECT NUMBER
G104733683

REPORT NUMBER
104733683CRT-001A

ISSUE DATE
7/7/2021

REVISED DATE
None

TEST DATES
6/21/21 through 7/7/21

DOCUMENT CONTROL NUMBER
RTTDS-R-AMER-Test-3407

PAGES
23

REPORT NUMBER
104733683CRT-001A

MODEL NUMBER(s)
VL 1600 PROFILE

REPORT RENDERED TO:
VARI-LITE LLC
10911 PETAL STREET
DALLAS, TX 75238
USA

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

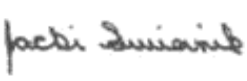
AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01186921-1.

TEST STANDARDS

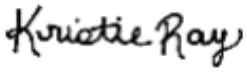
IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting
ANSI NEMA ANSLG C78.377: 2017: Specifications for the Chromaticity of Solid State Lighting (SSL) Products

In Charge of Testing:



Jacki Swiernik
Staff Engineer
Lighting Division

Reviewer:



Kristie Ray
Engineering Team Leader
Lighting Division

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Cortland, NY 13045
Telephone: (607) 753-6711
www.intertek.com

SAMPLE INFORMATION

REPORT NO. 104733683CRT-001A

ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	CRT2106141312-001	VL 1600 Profile	Automated Theatrical Luminaire	Prototype	6/14/2021

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Intended Test Type	Item Nos. Utilized
1	VL 1600 Profile	Sphere	1 @ Preset 1 (Optimized focus, all LEDs on)
2	VL 1600 Profile	Sphere	1 @ Preset 2 (Optimized focus, warm LEDs on)
3	VL 1600 Profile	Sphere	1 @ Preset 3 (Optimized focus, cool LEDs on)
4	VL 1600 Profile	Goniometer	1 @ Preset 4 (Narrow focus, all LEDs on)
5	VL 1600 Profile	Goniometer	1 @ Preset 5 (Wide focus, all LEDs on)
6	VL 1600 Profile	Goniometer	1 @ Preset 6 (Medium focus, all LEDs on)

SAMPLE PHOTOS - TESTED CONFIGURATIONS

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TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with IESNA LM-79.

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral distribution for each EUT resulting in photometric and colorimetric data. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position inside the sphere and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position near the EUT at equal height and stabilization procedures to LM-79 were followed.

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INTEGRATING SPHERE TESTING **REPORT NO. 104733683CRT-001A**

Test Configuration	Tested Model No.
1	VL 1600 Profile @ Preset 1 (Optimized focus, all LEDs on)

PHOTOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

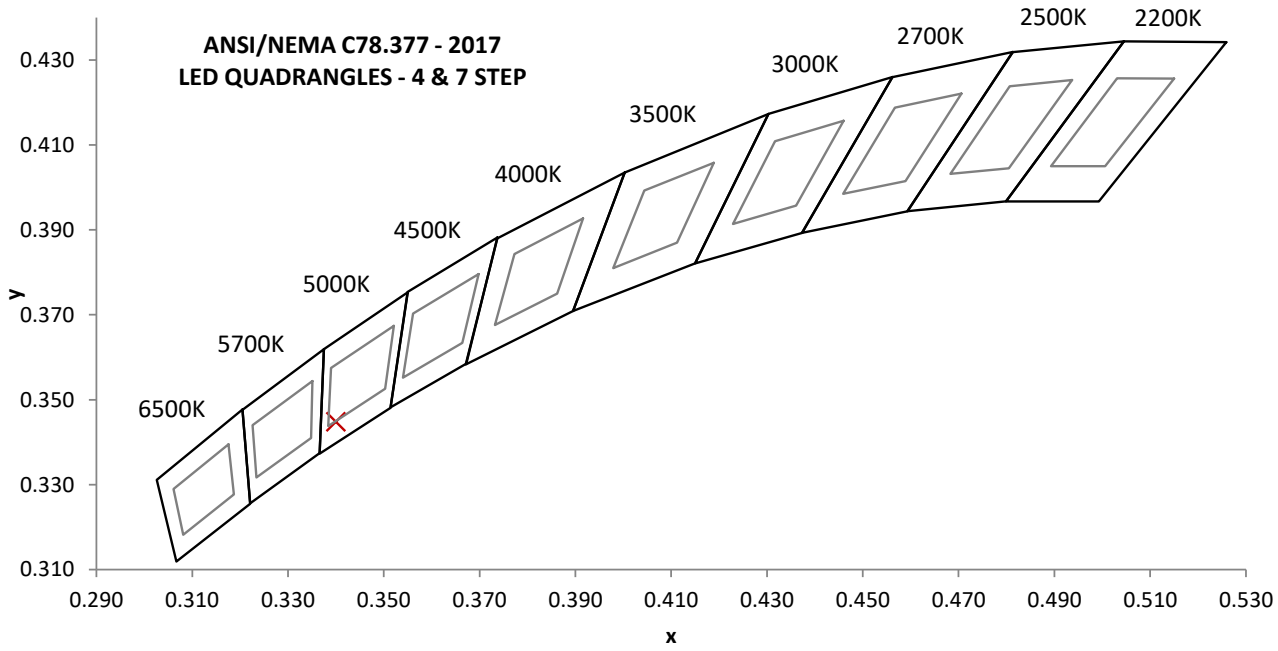
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
230.0	3033.2	675.9	0.969	12.77

Measured at 230(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
15134.2	22.4	5178	88.7	49.0

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0019	0.340	0.345	0.211	0.481



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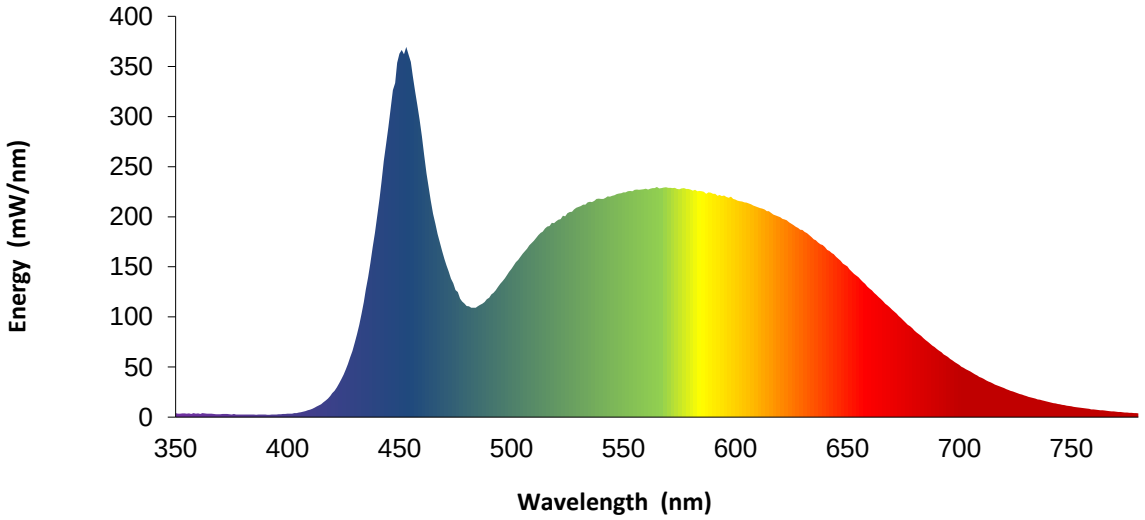
REPORT NO. 104733683CRT-001A

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	3.9		460	280.0		570	228.8		680	86.5
355	3.6		465	202.8		575	227.5		685	76.8
360	3.6		470	157.8		580	227.1		690	68.0
365	3.4		475	126.9		585	225.5		695	60.0
370	2.9		480	111.0		590	222.8		700	52.0
375	2.7		485	110.5		595	221.2		705	45.4
380	2.5		490	119.2		600	217.2		710	39.1
385	2.7		495	133.0		605	214.1		715	33.7
390	2.7		500	147.8		610	209.6		720	29.0
395	2.8		505	163.3		615	205.7		725	24.7
400	3.3		510	176.0		620	199.6		730	21.1
405	4.5		515	188.2		625	193.0		735	17.8
410	7.4		520	195.6		630	186.7		740	15.0
415	12.9		525	203.7		635	177.5		745	12.8
420	24.0		530	209.7		640	169.7		750	10.9
425	42.3		535	215.0		645	160.2		755	9.1
430	74.4		540	217.8		650	150.4		760	7.9
435	127.4		545	220.9		655	139.6		765	6.6
440	200.7		550	224.2		660	128.3		770	5.4
445	289.1		555	226.8		665	118.1		775	4.6
450	362.8		560	228.0		670	107.3		780	3.8
455	354.4		565	229.6		675	96.8		---	---



Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

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ANNEX A - TM-30 CALCULATIONS

REPORT NO. 104733683CRT-001A

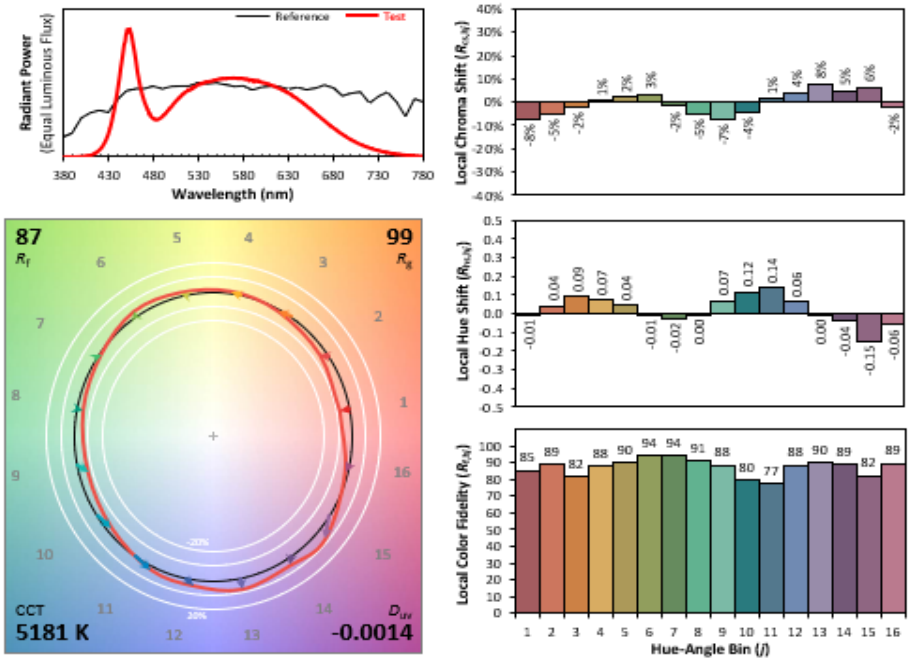
Test Configuration	Tested Model No.
1	VL 1600 Profile @ Preset 1 (Optimized focus, all LEDs on)

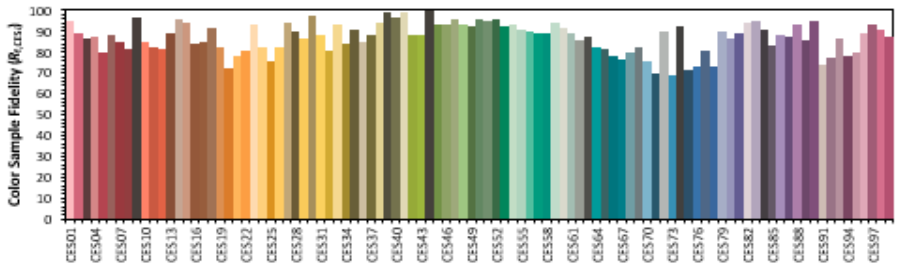
TM-30 REPORT

ANSI/IES TM-30-18 Color Rendition Report

Source: LED - YLX SSL550 **Manufacturer:** VARI-LITE

Date: 6/30/2021 **Model:** VL 1600 Profile @ Preset 1





Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3400
y	0.3448
u'	0.2106
v'	0.4805

CIE 13.3-1995 (CRI)

R_a	89
R_9	49

INTEGRATING SPHERE TESTING **REPORT NO. 104733683CRT-001A**

Test Configuration	Tested Model No.
2	VL 1600 Profile @ Preset 2 (Optimized focus, warm LEDs on)

PHOTOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

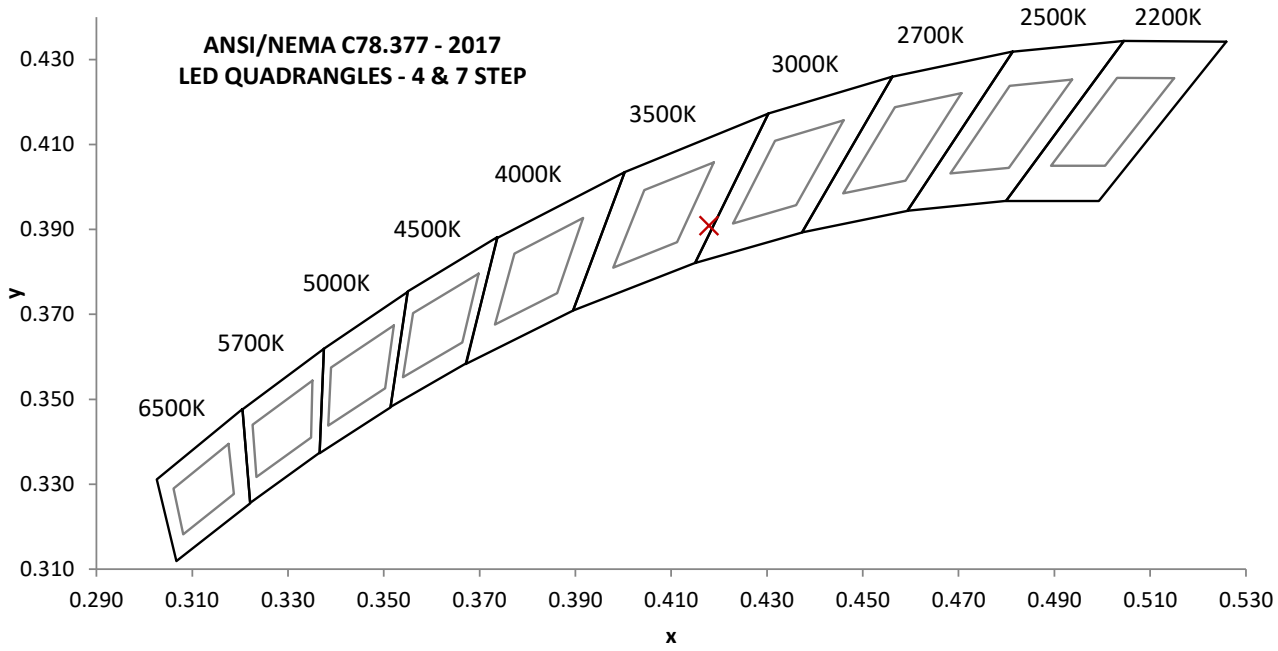
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
230.0	1759.3	381.6	0.943	13.91

Measured at 230(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
6220.2	16.3	3236	95.3	82.6

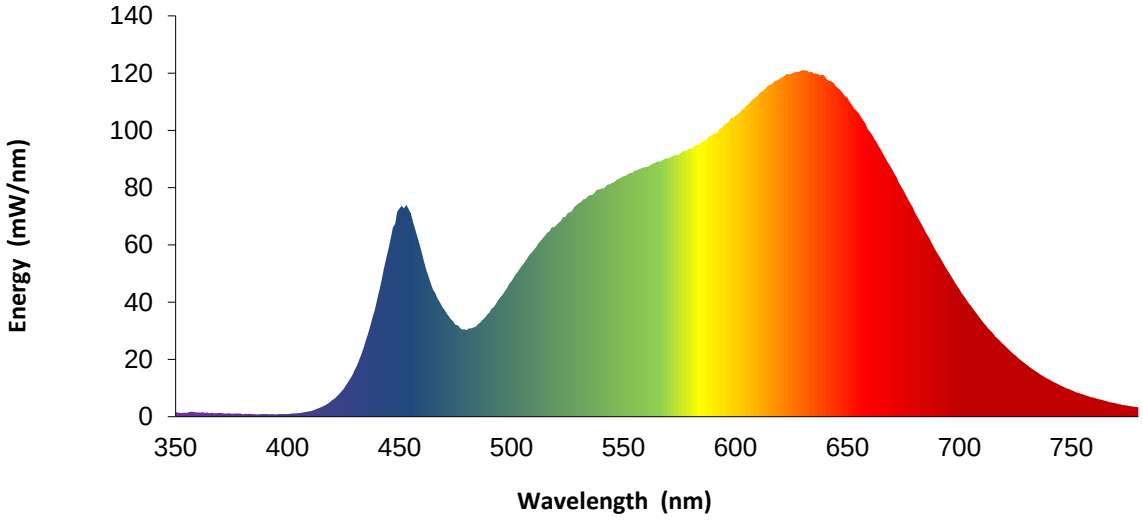
Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0026	0.418	0.391	0.244	0.513



REPORT NO. 104733683CRT-001A

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	1.6		460	57.2		570	90.2		680	71.7
355	1.3		465	44.4		575	91.7		685	64.4
360	1.5		470	37.4		580	93.7		690	57.4
365	1.2		475	32.0		585	95.9		695	50.9
370	1.3		480	30.2		590	98.5		700	44.6
375	1.0		485	32.2		595	102.1		705	38.9
380	0.8		490	36.3		600	105.0		710	33.7
385	1.0		495	41.7		605	108.7		715	29.2
390	0.9		500	47.2		610	112.1		720	25.0
395	0.9		505	53.2		615	115.8		725	21.5
400	1.0		510	58.2		620	118.1		730	18.2
405	1.2		515	63.2		625	119.8		735	15.4
410	1.9		520	67.0		630	121.1		740	13.1
415	3.3		525	71.1		635	119.9		745	11.0
420	5.8		530	74.5		640	118.9		750	9.3
425	9.7		535	77.4		645	115.4		755	7.8
430	16.3		540	79.7		650	111.5		760	6.7
435	26.7		545	81.7		655	106.1		765	5.6
440	41.0		550	83.9		660	99.6		770	4.6
445	58.4		555	86.0		665	93.3		775	3.9
450	72.8		560	87.3		670	86.4		780	3.3
455	71.0		565	89.2		675	79.2		---	---



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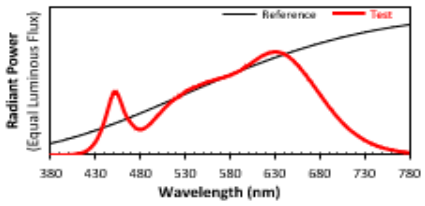
Test Configuration	Tested Model No.
2	VL 1600 Profile @ Preset 2 (Optimized focus, warm LEDs on)

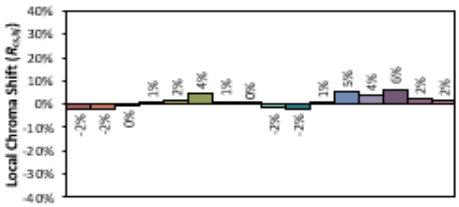
TM-30 REPORT

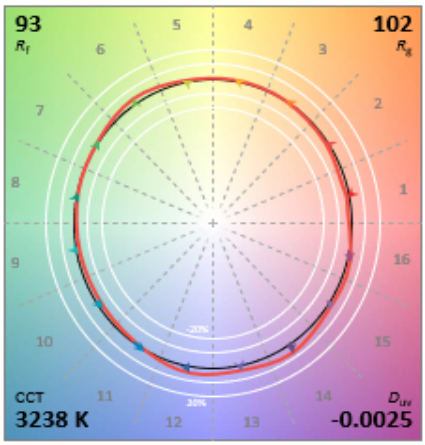
ANSI/IES TM-30-18 Color Rendition Report

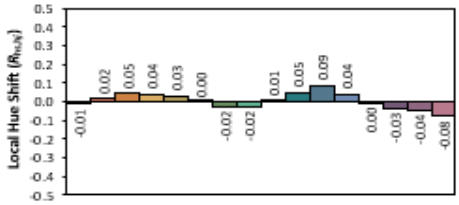
Source: LED - YLX SSL550 **Manufacturer:** VARI-LITE

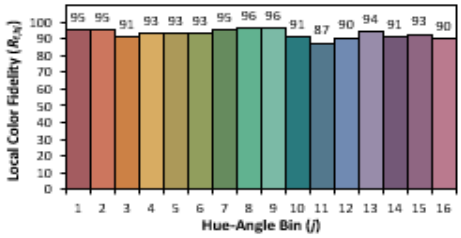
Date: 6/30/2021 **Model:** VL 1600 Profile @ Preset 2

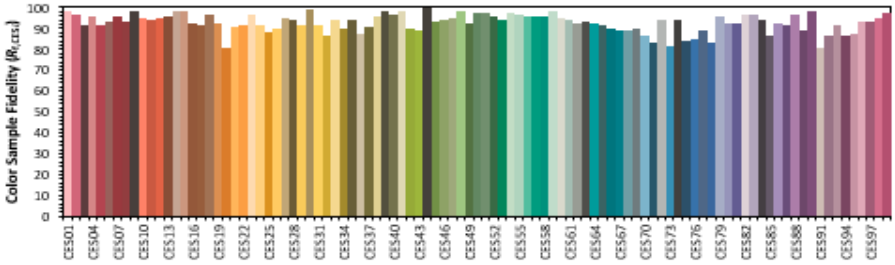












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4179
y	0.3909
u'	0.2439
v'	0.5132

CIE 13.3-1995 (CRI)

R_a	95
R_9	83

INTEGRATING SPHERE TESTING **REPORT NO. 104733683CRT-001A**

Test Configuration	Tested Model No.
3	VL 1600 Profile @ Preset 3 (Optimized focus, cool LEDs on)

PHOTOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

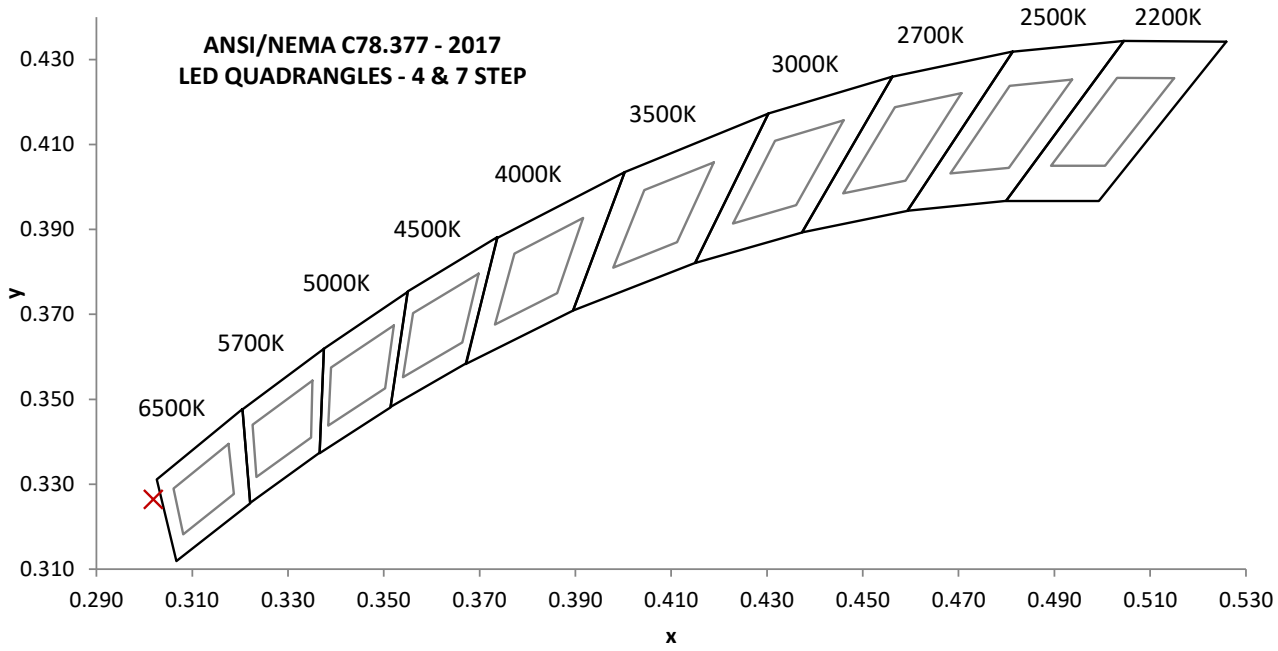
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
230.0	1759.5	381.7	0.943	13.98

Measured at 230.04(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
9559.2	25.0	7140	78.4	-21.1

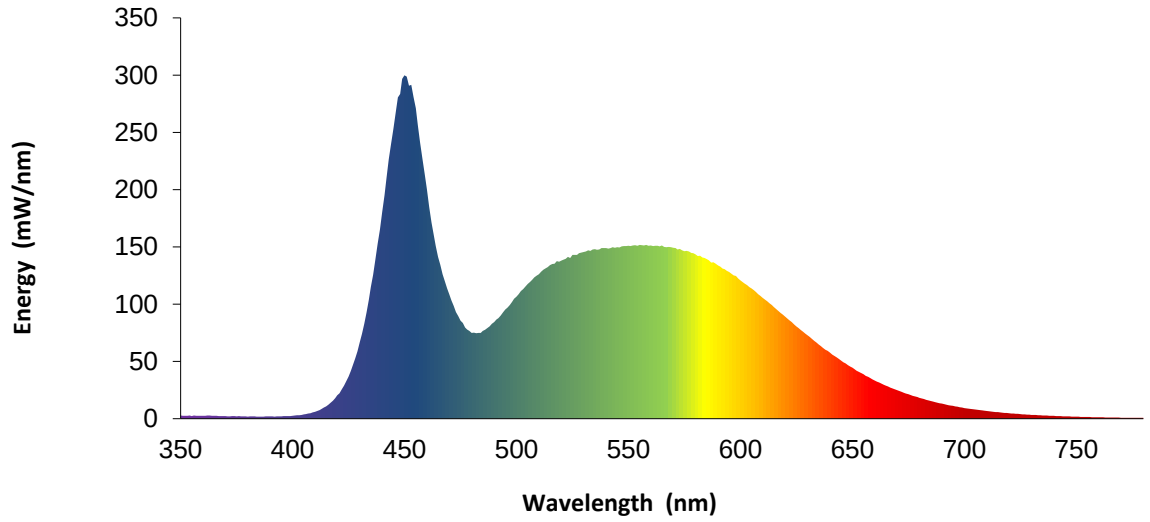
Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0071	0.302	0.326	0.191	0.465



REPORT NO. 104733683CRT-001A

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	2.9		460	200.3		570	149.2		680	18.2
355	2.3		465	141.2		575	146.3		685	15.4
360	2.5		470	108.1		580	143.5		690	13.1
365	2.5		475	85.5		585	139.4		695	11.2
370	2.2		480	75.0		590	133.9		700	9.4
375	2.0		485	76.8		595	128.2		705	7.9
380	1.8		490	84.3		600	120.9		710	6.7
385	1.9		495	95.3		605	113.8		715	5.7
390	1.9		500	106.4		610	105.5		720	4.8
395	2.0		505	117.6		615	97.7		725	4.0
400	2.5		510	126.2		620	89.2		730	3.4
405	3.7		515	134.0		625	80.7		735	2.9
410	6.0		520	138.2		630	73.0		740	2.4
415	10.6		525	143.0		635	64.8		745	2.1
420	20.5		530	145.6		640	57.7		750	1.8
425	37.0		535	148.1		645	50.7		755	1.5
430	66.6		540	149.0		650	44.4		760	1.3
435	115.0		545	149.7		655	38.8		765	1.1
440	180.5		550	150.9		660	33.4		770	0.9
445	252.8		555	151.7		665	28.9		775	0.8
450	299.9		560	151.3		670	24.9		780	0.7
455	271.1		565	151.2		675	21.4		---	---



Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

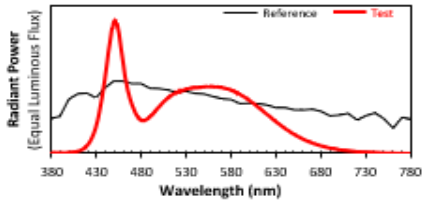
Test Configuration	Tested Model No.
3	VL 1600 Profile @ Preset 3 (Optimized focus, cool LEDs on)

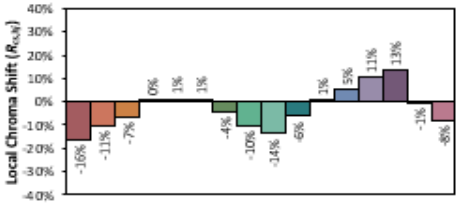
TM-30 REPORT

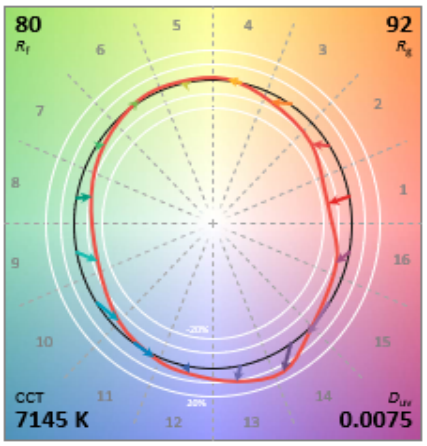
ANSI/IES TM-30-18 Color Rendition Report

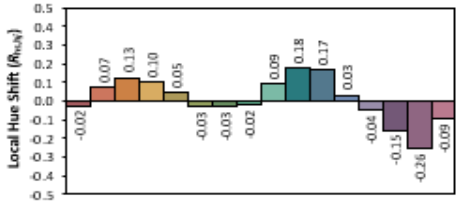
Source: LED - YLX SSL550 **Manufacturer:** VARI-LITE

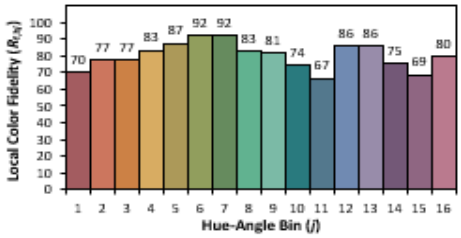
Date: 6/30/2021 **Model:** VL 1600 Profile @ Preset 3

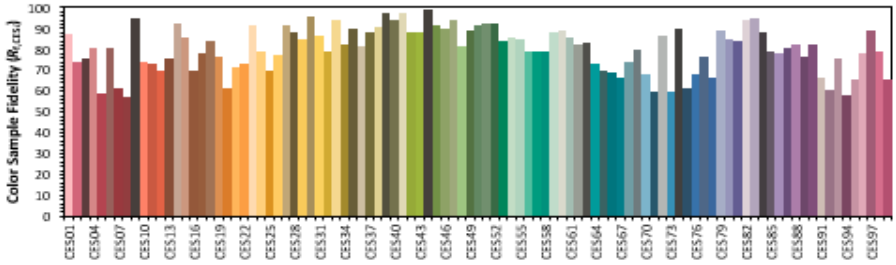












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3019
y	0.3264
u'	0.1913
v'	0.4653

CIE 13.3-1995 (CRI)

R_a	78
R_9	-21

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING **REPORT NO. 104733683CRT-001A**

Test Configuration	Tested Model No.
4	1 @ Preset 4 (Narrow focus, all LEDs on)

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	230.08	3013.8	673.4	0.971

Light Output (lm)	Lumen Efficacy (lm/W)
13977.8	20.8

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	1225754	1225754	1225754	1225754	1225754
5	696	639	660	692	718
10	0	0	0	0	0
15	0	0	0	0	0
20	0	0	0	0	0
25	0	0	0	0	0
30	0	0	0	0	0
35	0	0	0	0	0
40	0	0	0	0	0
45	0	0	0	0	0
50	0	0	0	0	0
55	0	0	0	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
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105	0	0	0	0	0
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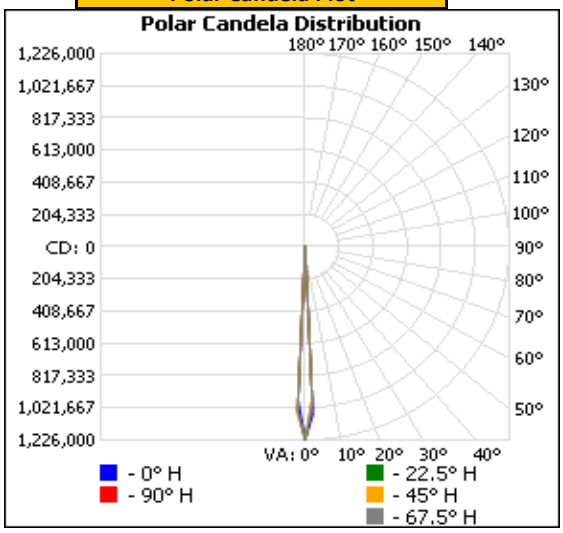
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file

Polar Candela Plot

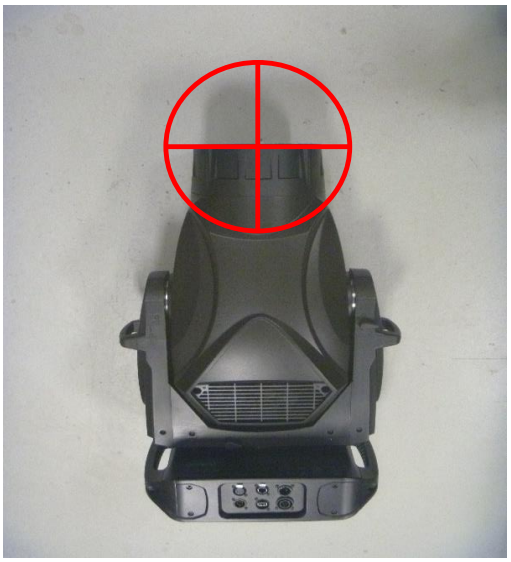


ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	**Width (ft)**	**Height (ft)**
0.62	0.62	0.00
0°-180° H	**90°-270° H**	**0°-180° V**

Test Distance (ft)
29.6

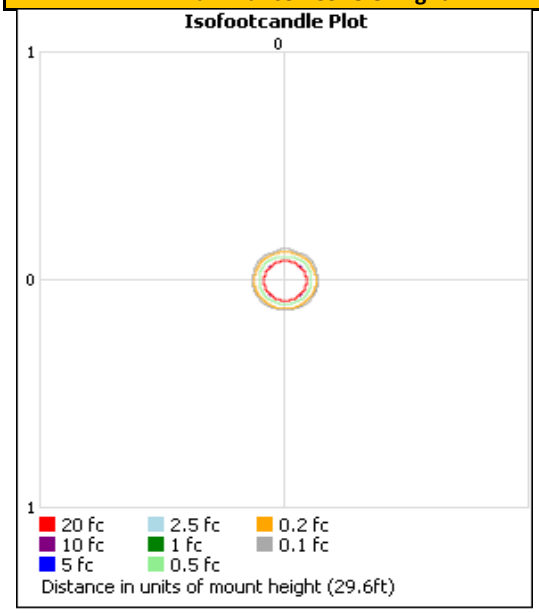
PHOTOMETRIC CENTER OF EUT

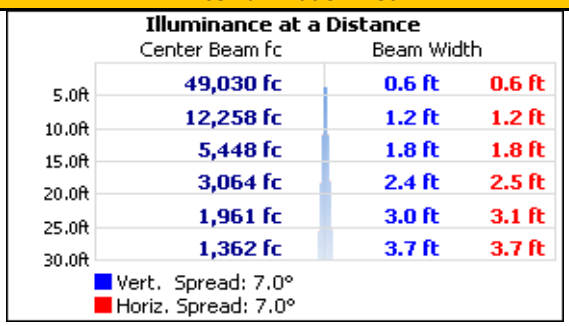


REPORT NO. 104733683CRT-001A

ILLUMINANCE SUMMARY

Mounting Height: 30ft	
Illuminance - Cone Of Light	**Isoillumination Plot**





ZONAL LUMENS

Zonal Lumen Summary

Zone	Lumens	Luminaire
0-30	13,977.8	100.0%
0-40	13,977.8	100.0%
0-60	13,977.8	100.0%
60-90	0.0	0.0%
70-100	0.0	0.0%
90-120	0.0	0.0%
0-90	13,977.8	100.0%
90-180	0.0	0.0%
0-180	13,977.8	100.0%

Zone	Lumens	Total	Zone	Lumens	Total
0-10	13977.8	100.0%	90-100	0.0	0.0%
10-20	0.0	0.0%	100-110	0.0	0.0%
20-30	0.0	0.0%	110-120	0.0	0.0%
30-40	0.0	0.0%	120-130	0.0	0.0%
40-50	0.0	0.0%	130-140	0.0	0.0%
50-60	0.0	0.0%	140-150	0.0	0.0%
60-70	0.0	0.0%	150-160	0.0	0.0%
70-80	0.0	0.0%	160-170	0.0	0.0%
80-90	0.0	0.0%	170-180	0.0	0.0%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING **REPORT NO. 104733683CRT-001A**

Test Configuration	Tested Model No.
5	1 @ Preset 5 (Wide focus, all LEDs on)

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	230.05	2993.6	668.6	0.971

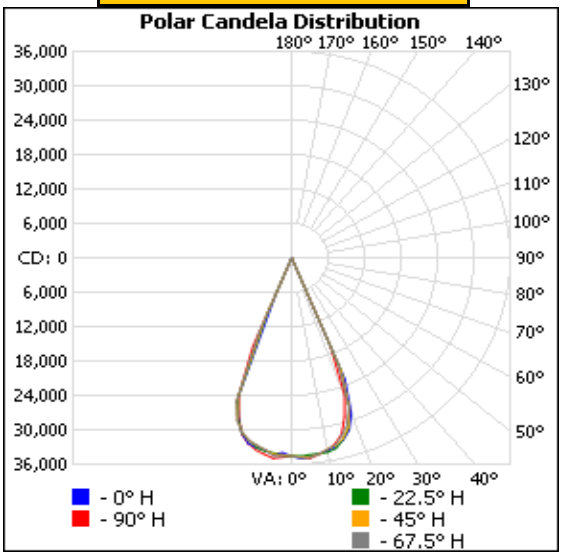
Light Output (lm)	Lumen Efficacy (lm/W)
15111.6	22.6

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	34568	34568	34568	34568	34568
5	34722	34425	34814	34934	35064
10	34076	34390	33798	33867	34008
15	32847	32726	32643	32032	31780
20	28740	27701	27866	27480	25459
25	234	131	348	401	127
30	31	30	30	30	29
35	19	18	18	17	17
40	11	10	9	10	9
45	4	4	4	4	4
50	3	3	3	3	3
55	2	2	2	3	3
60	1	1	1	1	1
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file

Polar Candela Plot

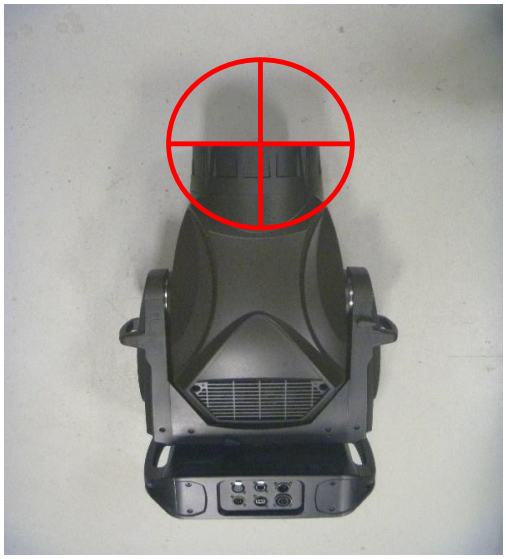


ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	**Width (ft)**	**Height (ft)**
0.62	0.62	0.00
0°-180° H	**90°-270° H**	**0°-180° V**

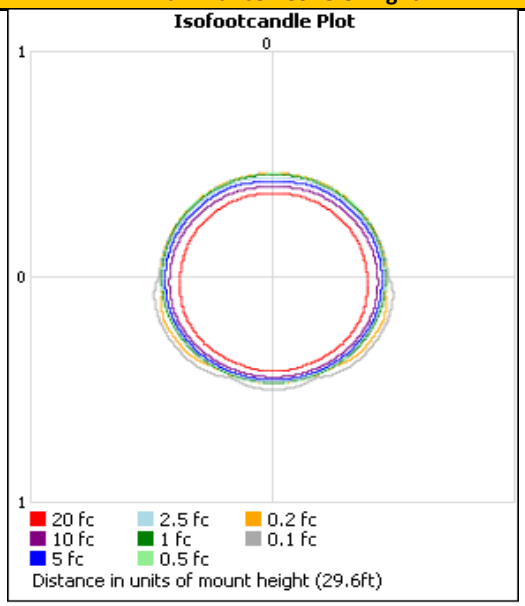
Test Distance (ft)
29.6

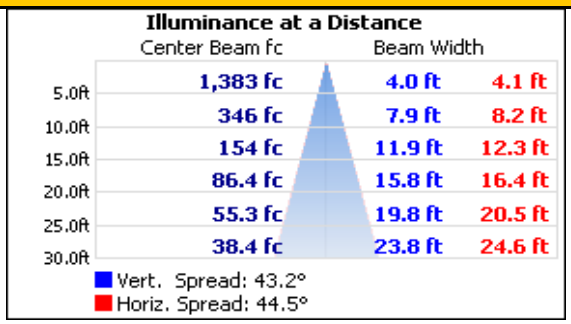
PHOTOMETRIC CENTER OF EUT



ILLUMINANCE SUMMARY

Mounting Height: 30ft	
Illuminance - Cone Of Light	**Isoillumination Plot**





ZONAL LUMENS

Zonal Lumen Summary		

Zone	Lumens	Luminaire
0-30	15,094.3	99.9%
0-40	15,105.5	100.0%
0-60	15,111.3	100.0%
60-90	0.3	0.0%
70-100	0.0	0.0%
90-120	0.0	0.0%
0-90	15,111.6	100.0%
90-180	0.0	0.0%
0-180	15,111.6	100.0%

Zone	Lumens	Total	Zone	Lumens	Total
0-10	3268.7	21.6%	90-100	0.0	0.0%
10-20	8792.2	58.2%	100-110	0.0	0.0%
20-30	3033.4	20.1%	110-120	0.0	0.0%
30-40	11.2	0.1%	120-130	0.0	0.0%
40-50	3.7	0.0%	130-140	0.0	0.0%
50-60	2.1	0.0%	140-150	0.0	0.0%
60-70	0.3	0.0%	150-160	0.0	0.0%
70-80	0.0	0.0%	160-170	0.0	0.0%
80-90	0.0	0.0%	170-180	0.0	0.0%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING **REPORT NO. 104733683CRT-001A**

Test Configuration	Tested Model No.
6	1 @ Preset 6 (Medium focus, all LEDs on)

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	230.06	2975.2	664.4	0.971

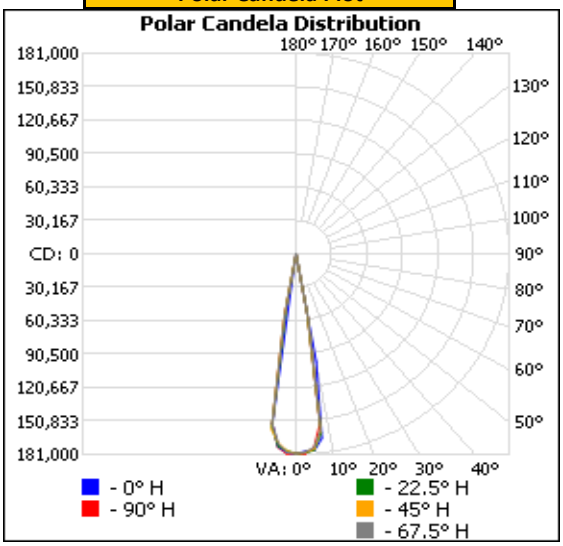
Light Output (lm)	Lumen Efficacy (lm/W)
14913.0	22.4

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	180283	180283	180283	180283	180283
5	177909	177721	176787	175054	175226
10	98389	54048	58121	61103	54260
15	95	91	92	93	94
20	56	35	28	30	41
25	15	11	17	8	15
30	0	0	0	0	0
35	0	0	0	0	0
40	0	0	0	0	0
45	0	0	0	0	0
50	0	0	0	0	0
55	0	0	0	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file

Polar Candela Plot



ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	**Width (ft)**	**Height (ft)**
0.62	0.62	0.00
0°-180° H	**90°-270° H**	**0°-180° V**

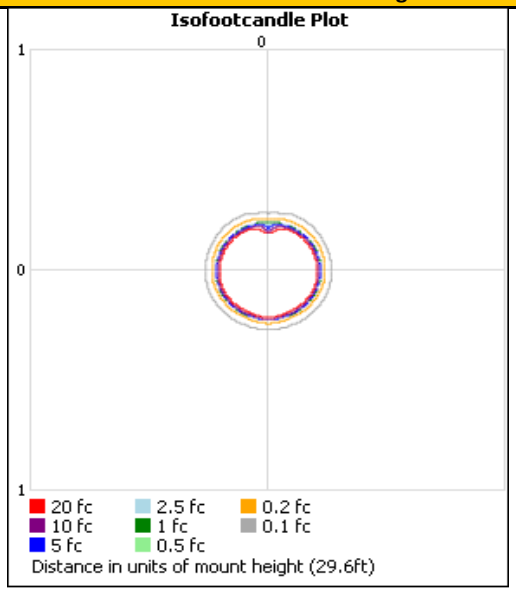
Test Distance (ft)
29.6

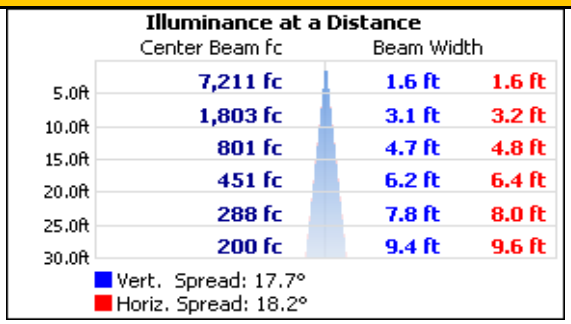
PHOTOMETRIC CENTER OF EUT

REPORT NO. 104733683CRT-001A

ILLUMINANCE SUMMARY

Mounting Height: 30ft	
Illuminance - Cone Of Light	**Isoillumination Plot**





ZONAL LUMENS

Zonal Lumen Summary

Zone	Lumens	Luminaire
0-30	14,913.1	100.0%
0-40	14,913.1	100.0%
0-60	14,913.1	100.0%
60-90	0.0	0.0%
70-100	0.0	0.0%
90-120	0.0	0.0%
0-90	14,913.1	100.0%
90-180	0.0	0.0%
0-180	14,913.1	100.0%

Zone	Lumens	Total	Zone	Lumens	Total
0-10	13492.4	90.5%	90-100	0.0	0.0%
10-20	1414.2	9.5%	100-110	0.0	0.0%
20-30	6.5	0.0%	110-120	0.0	0.0%
30-40	0.0	0.0%	120-130	0.0	0.0%
40-50	0.0	0.0%	130-140	0.0	0.0%
50-60	0.0	0.0%	140-150	0.0	0.0%
60-70	0.0	0.0%	150-160	0.0	0.0%
70-80	0.0	0.0%	160-170	0.0	0.0%
80-90	0.0	0.0%	170-180	0.0	0.0%

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www.intertek.com

EQUIPMENT LIST

REPORT NO. 104733683CRT-001A

#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Elgar AC Power Supply	CW1251	---	VBU	VBU
2	Sorenson DC Power Supply	XFR 150-8	---	VBU	VBU
3	Traceable Hygrothermometer	4800	L206	2/12/2021	2/12/2022
4	Yokogawa Power Analyzer	WT1600	E473	6/22/2020	6/22/2021
5	Fluke Thermometer	53 II	D587	2/5/2021	2/5/2022
6	3M Integrating Sphere Spectrometer System	CDS 1100	O235	5/24/2021	8/24/2021
7	Fisher Scientific Stopwatch	14-649-9	N1132	3/26/2021	3/26/2022
8	LSI High Speed Mirror Goniophotometer	6440	---	5/14/2021	8/14/2021
9	Elgar AC Power Supply	CW1251	---	VBU	VBU
10	Yokogawa Power Analyzer	WT210	E464	5/11/2021	5/11/2022
11	Traceable Hygrothermometer	4800	L204	2/21/2021	2/21/2022
12	Sorenson DC Power Supply	XG 150-10	---	VBU	VBU
13	Omega Thermometer	DPi8-C24	M263	3/23/2021	3/23/2022
14	Bosch Distance Laser	Pro GLM 20	L211	3/3/2021	3/3/2022
15	M-D Building Products Digital Level	Smart Tool	L112	5/26/2021	5/26/2022

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
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